1:Nimuendajú E-5 (1941-1942) 1952
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Articles of use, clothes, for instance, are kept in a large basket made of *uarumã*, with a lid and a round mouth. Four pointed bulges woven in the lid and at the bottom serve as feet (pl. 5, *b*). Another type of uarumã basket, with a round mouth, has a flat, square lid and bottom (pl. 5, *d*). Baskets of these two types are found in all sizes, from 4 to 40 cm. in diameter. There are other small conical baskets woven in spiral technique, with flat bottoms. I do not know whether they are aboriginal or are imitations of the Neobrazilian *balaios* (hampers or fruit baskets).

In many houses nowadays one sees trunks that have been purchased from the Neobrazilians. In most houses, however, clothes and tucum fibers are suspended from the crossbeams. Almost always, too, there are the remains of preparations for the last celebration: some costumes hanging from the house posts, fragments of tururí cloth thrown on top of the highest crossbeams, dance batons thrust beneath the roof thatch, small drums tied to the corner rafters, grotesque masks wrapped in bundles of tururí cloth, and rolls of tururí containing ornaments. Frequently, also, one sees ears of maize tied together on the crossbeams or the loft.

The kitchen.—Nowadays at least, no one keeps or cooks food in the living quarters. For this purpose there is always a special little hut, ten to fifty meters away from the main house. Today this is invariably a rectangular shelter with a ridge roof.

According to Bates, the fires were built in the open space in the center of the house.[1] But the haphazard construction of the house he describes makes one doubt that this was customary, nor can one understand how the Indians, if they had kitchen fires in the middle of the house, could carry on in it such active ceremonies as the puberty ceremony. Moraes Torres, however, describes a Tukuna house which he saw a few years before, in 1852, perhaps in the same place (near São Paulo de Olivença), in which the space encircled by the inner series of the roof supports "served as kitchen and dance-hall."[2] It is noteworthy that most accounts give the cook shed its Portuguese name, *cozinha* (T., kuči'ná).

All this leads one to believe that such separate sheds were an innovation that appeared when the Tukuna learned the preparation of fermented manioc flour, *farinha d'agua*, from the Neobrazilians, and that they are variants of the Neobrazilian oven "houses." At the same time, the Tukuna swear that these sheds have been used since the old days and that the aboriginal type was also circular.

In any case, the separate cook shed is today an outstanding characteristic of all the Tukuna settlements, distinguishing their houses at first glance from those of other peoples of the region, who cook beneath the roof of their dwellings or in an attached shed. In the Tukuna shed one finds everything necessary for preparing the daily food, as well as for making manioc flour.

The kitchen fire is distinguished by a *trempé*, a three-legged stand placed over the fire to hold a cooking pot. It consists of three pieces of baked clay, the central part, on which the pot rests, being either pierced or solid.

Nowadays, fires are lighted by means of matches or a flint and steel lighter acquired in trade. According to Tessmann, fire was formerly produced by striking

[1] Bates, The Naturalist on the River Amazons, 2:403.
[2] Moraes Torres, Itinerario das visitas, p. 93.

1:Nimuendajú E-5 (1941-1942) 1952
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of a heavy wood, *cumarú;* it is two fingers thick and as much as 80 cm. long (fig. 4, *a*), and with it they crush and mill the material in a long semicylindrical trough (tau/ta'), sometimes open at both ends. In this hod they often work with a short wooden pestle; I saw one which ended at the top in a sculptured human head.

The cook shed is also the place where they make dry manioc flour, *farinha de mandioca*, which is probably the Tukuna product most desired by the Neobrazilians today. Formerly, the Tukuna did not know how to use it, but for dry flour substituted *beijú*, a thin flat cake of fermented manioc dough baked on a clay slab. They also had a flour made of maize cracked by the heat of fire,[10] which went by the name of a/tẽ'ẽ and was eaten with bananas.

The Neobrazilians probably taught the Tukuna how to make manioc dry flour, since so many of the Tukuna terms relating to it are Neobrazilian, for instance, the name of the product, ʊ:'i (l.g., uś), and of the utensils used in its manufacture: e.g., yapu'na, oven (l.g., *yapúna*), te'piti, press (l.g., *tipity*), kuču, hod for the dough (P., *cocho*).

I do not know what shape the earlier grater had; today it is invariably made of a punctured sheet of metal. There are still small graters which are made from the aerial root of the *paxiubinha*, and others made from the bony part of the tongue of the pirarucú, but they are no good for grating manioc roots; they are useful only in the preparation of certain medicines.

Like any other load, the manioc roots are brought from the garden patch in large conical baskets (pl. 4). These are made by the men—who, however, never use them—in an open-mesh technique, usually of split *cipó*, more rarely of uarumã stems. The Tukuna say that they learned to make this type of basket (vo'tura; Tupi, *waturá*) from the Omágua, who then made war against the Tukuna for copying an Omágua article. Formerly the Tukuna baskets were cylindrical, with a square bottom. All are carried with a tumpline of envira. Baskets of both types are in use today, although the first type predominates.

Aside from these carrying baskets, the Tukuna also have a large woven bag, ñẽ'/rį, closed by a drawstring passed through the mesh row of the opening; it often has a tumpline woven of the same material (pl. 7, *e*). This bag, *puçá*, with the mouth held open by a hoop of cipó or of elastic wood, also serves as a dip net. It is mentioned in the legend of the origin of culture heroes as one of two articles typically used by women and is one of the elements which the Tukuna share with the cultures of eastern Brazil and the Chaco.

Formerly, the Tukuna peeled manioc roots with the edge of a large bivalve shell, koru, common along the Solimões. This is used even today to scrape pineapples for the preparation of a cooling drink.

For soaking bundles of manioc roots in plain water the Tukuna invariably use an old canoe near the entrance to the house. The squeezed pulp from the press (tipity) is placed in a hod, open at both ends and set slightly inclined on two sawhorses. Nowadays, the Tukuna make "dry" farinha just as much as "wet"; they rarely bother with tapioca. The pulp is strained through square, large-meshed sieves made of strips of bamboo, *taboca*, or uarumã (ʊ:'i-čim|/|ⁿn).

For other purposes there is a small fine-meshed sieve, va'ira-čin|/|ⁿn (*vaira*,

[10] The word for popcorn, *pipoca*, was not used here.—Trans.

1:Nimuendajú E-5 (1941-1942) 1952
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412 assai). These sieves are identical with those of the Neobrazilians and are probably borrowed from them. The original type of Tukuna sieve is perhaps the round one found occasionally even today; it fits better in the mouths of the jars used in straining the pulp from which beverages are made, the original purpose of these sieves.

The paddle for stirring manioc flour in the oven is the same as that used by the [171] Neobrazilians—a small board attached to a long stick, if it is not just some old canoe paddle. For turning cassava (*mandioca*) cakes in the oven the Tukuna use a small board shaped like a segment of a circle, almost invariably a broken section [285] of an old canoe-paddle blade. Flour is kept in cylindrical openwork baskets woven [251] of uarumã in an open-mesh technique, lined with leaves that also seal the top, and tied by a plait of cipó. This is the common form also used by the Neobrazilians.

352 In the kitchen there are always a number of small four-legged benches, ȵʊ/ma'vᵋ (fig. 4, *b*), rectangular or oval in shape, each carved entirely from a single piece of wood. Sometimes they are made in the form of a tortoise, *jabotí* (*Emys tabulata*) (pl. 9, *c*), and they are always made with some cunning. They are never more than [362] ten centimeters high. These benches are used exclusively by men while partaking of refreshments, whereas the women sit on the floor.

356 *Cleanliness.*—The house as well as the kitchen is usually clean, since both are swept out at least once daily with a broom made of the leaf ribs of small *tucumã* leaves left over from the fibers used in making thread. The Tukuna do not tolerate a stink in the house or in the kitchen. They immediately remove excreta of domestic [412] animals or of small children, including the soiled portion of the earth, with the [231] point of a short, broad blade.[11] This scrupulousness is the main reason why these Indians have a distaste for raising chickens and never keep pigs.

Neither dog fleas nor chiggers (*Pulex penetrans; bicho de pé*) become annoying [136] in Tukuna houses, but cockroaches, crickets, and tracuá ants are most disagreeable. These last, above all, immediately swarm over any food not on the grill while the fire is burning and invade baskets and trunks with irritating persistency. The Indian chief Calixto daueru'kį fought this plague in Igarapézinho by thrusting thick reeds, open at one end, into the house thatch. In a short time the insects would build their nests in these reeds and, when the reeds were filled, he would shake them out over the fire and again insert the reeds in the thatch.

Communication between Settlements

487 Formerly, communication between isolated settlements was mainly by land, since the Tukuna, in contrast to the Omágua, were foot Indians, not canoe men. All the igarapés (tributaries of the left bank of the Solimões) inhabited by these Indians were connected by trails; likewise the different houses along a particular igarapé. Castelnau mentions these paths,[12] which connected the Tukuna habitations of the interior from Caldeirão (Belém) to Tabatinga and Loreto. With the development of navigation many of these trails were abandoned, although some are used even today.

501 Originally, the Tukuna practiced little navigation, being isolated in their jungle 177 centers on solid ground by the Omágua, their superiors in warfare. They had only

[11] *Terçado*, lit., a short, broad sword; probably the machete or *facão*.—Trans.
[12] Castelnau, p. 50.

1:Nimuendajú E-5 (1941-1942) 1952
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small craft made from the trunks of *paxiuba barriguda*.[18] In contact with the Omágua, hostile at first but ultimately peaceful, they exchanged their admittedly primitive craft for their neighbors' *ubá*—a canoe completely hollowed out from a cedar trunk, with the gunwales not expanded by fire.

Finally, they learned from the Neobrazilians the use of the *casco* (pl. 10, *f*), a canoe hollowed out from a tree trunk, carved both inside and out, expanded by fire, and finally strengthened by interior braces. Today the Tukuna are excellent canoewrights for craft of this type, their cascos being duly appreciated by the Neobrazilians. They have become a canoe people and sometimes pass entire weeks on trips in this craft.

At the same time, though they have neglected their original trails, they have opened up countless paths and passages of all kinds through the flooded jungles in the marginal region along the Solimões and the igarapés, where they fish and go from one house to another in their canoes. Since these passages are often low and narrow, the Indians use only mats to protect their gear from the rains, not the *punacarica* or semicylindrical awning common to the entire Amazonian region. Rafts are never used for transport.

The casco is propelled almost exclusively by paddling, only rarely by poling. The paddle (fig. 4, *c*), another article the Tukuna sell in quantities to the Neobrazilians, has a round blade with a point about the length of the radius of the central part or longer. The shaft ends in a small, slightly concave crosspiece. The Tukuna say that originally the points of the paddles were shorter and less sharp than now. According to Tessmann, the blade was large and round. The blade, the crosspiece, and a small part of the adjacent shaft are invariably stained with cumatê paint, only the central part of the shaft remaining white. There are no other decorations on the paddle except those in imitation of the Neobrazilians'.

[18] According to J. S. Decker, Flora Brasileira, this species is *Iriartea exorrhiza*; *I. ventricosa* is known as *castiçal*.—Trans.

1:Nimuendajú E-5 (1941-1942) 1952
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the wild state by the first men, who raised them in their houses. Even today the Tukuna raise very few chickens, since they dislike their dirtying up the house or yard. Their forefathers had an aversion to the flesh but ate the eggs. Of the present generation no one refused to eat chicken with me, but in general they raise them only for sale to the Neobrazilians.

The plague of blood-sucking bats forces the poultry raisers to keep their wards almost always locked up at night in well-closed henhouses. These are generally conical in shape; one that I saw even had a veranda! Ducks, which are not very numerous, were recently introduced, as their name "pa'tu" (P., *pato*, duck) indicates.

With the exception of large mammals and birds of prey, the Tukuna occasionally raise at home the young of almost every species of wild animal that falls into their hands. These animals, all of which have the run of the place, generally stay only a short time in the possession of their original captors, since they are greatly sought after by the Neobrazilians. Others, upon becoming adult, turn wild or almost wild, coming and going at will from house to jungle and back again; they are given food, but no attempt is made to recapture them.

Every year, in the winter, the women and children are in the habit of raising the young of a marmoset called *leõozito* (little lion)[24] by the Neobrazilians. Sometimes two or three may be observed clinging to the hair of their mistress, who thus carries them wherever she goes, giving them masticated food from her own mouth. During the night she shelters them in a conical basket, woven in an openwork technique; it is suspended with the bottom down and is covered with tururí bark cloth, the round entrance being plugged up with a bit of rag. Although these tiny creatures cannot be raised outside this region, they are much coveted by civilized persons.

Fishing

Fishing is the principal occupation of the men, who rarely let a day pass without indulging in it. A boy is taught to fish, from childhood, accompanying his father in the canoe and maneuvering it at his command. Even at the age of six, both boys and girls pass long hours alone in the igarapé or igapó in the small canoes their fathers make for them. At the age of nine or ten many boys are already able to provide the household with the fish required.

The equipment consists of the fishhook, javelin, arrow, harpoon, and arrow-harpoon. According to Tessmann, bone fishhooks were formerly used. I did not succeed in getting data from my informants on this point. They were able to tell me only that in the old days the children used to fish for small fry with the mandibles of the *taóca* army ants (*Ecyton* sp.), called vɔ'/čata in Tukuna. If this is true, then the fish certainly must have been only very tiny and of no economic value.

However, the fishhook (pɔ'/va) figures in the legend of the culture heroes as the property of a demon much older than they (see p. 126). Nowadays the Tukuna do not go off in their canoes without taking one or more reeds with fishhooks of various sizes with which to experiment as soon as they arrive at a propitious place.

[24] Also called *leoncito*, *saguim leõesinho*, and *chichico* (*Cebuella pygmaea pygmaea*, Spix).—Trans.

1:Nimuendajú E-5 (1941-1942) 1952
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881 773 539 e) A girl was in seclusion; a feast was about to be celebrated. Aside from her, there was no one in the house. In the kitchen there lay beneath a cover on the platform (giráu) all the smoked game for the feast. Suddenly, through a crack in the wall of her room, the vərëkị observed a smoked monkey descend from the platform. Seizing a blowgun, it began to dance with this up and down the kitchen. Then a roasted sloth also clambered down, going first to the fireplace to warm itself, then it searched for the rattle stick, which was already prepared for the feast, and in its turn began to dance to and fro. After some time both returned to the platform.

As soon as her mother returned to the house, the vərëkị told her what she had seen. The mother went to the smoked meat on the platform, examined the sloth, and, seeing that it was dirty with ashes, believed what her daughter had told her. "Nothing like this has ever happened before; I believe that you are going to die!" she said to her daughter. And sure enough, the following morning the girl lay dead in her seclusion room.

342 881 [616] Formerly, a small room, na-pi"i" (pl. 11, a) was made for the girl as soon as possible, against the east wall of the house if she belonged to moiety A, against the west wall if she belonged to moiety B. This little retreat was circular, two meters in diameter or a little more, and had no floor, since the vərëkị sleeps in her hammock throughout her seclusion. The walls are made of long, white strips of burity, tied with cipó firmly together in horizontal bands. These extend from the floor to the roof thatch, where their tips are bent toward the front. On the left side (looking at the room) there is a door, closed by a kind of hanging mat made from [285] burity frondstalks set in a horizontal position and held firm by two vertical rods. Often today the seclusion room is square and is not erected where it should be, because the position of the house on the banks of the Solimões or igapó does not permit it. In general, to make such a room, people are called together for a work [476] party (uajurí) to which, above all, members of the clans of the vərëkị's moiety are invited.

881 *Preparations for the feast.*—The preparations for the feast which now begins may take more than two months, sometimes requiring even one or two more work parties. Nowadays, what really delays completion of the preparations is the difficulty of collecting a sufficient quantity of smoked game for the number of guests; [136] game is now rare in the country (p. 26), and even fish are not caught easily.

[252] The game is roasted on a forked grill, first in the jungle and later in the kitchen, where it is then stored on its own large, covered platform. When the last pieces arrive, the first are already desiccated to the point where they more or less resemble charred wood. At the same time, the women prepare alcoholic drinks, of [273] which a sufficient quantity is required not only for the feast itself but also for the preliminary work party. In the meantime the date of the celebration must be calculated, so that the invitations may be issued.

881 574 *Invitations.*—Two invitations are given for any celebration: the first advising of the approximate time with relation to the phase of the moon ("in the first full moon"), the other fixing the exact day that the ceremony begins. Feasts are preferably held during the full moon, not because any magical influence is attributed to it but simply because it is much more agreeable to have the house and yard of the ceremony flooded with moonlight than plunged in darkness.

881 574 202 Invitations are delivered personally by the host, that is, by the vərëkị's father or by a person especially charged by him. The messenger travels from house to house informing the residents that the celebration is drawing near and that the

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A VISITING FAMILY

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1: Nimuendajú E-5 (1941-1942) 1952
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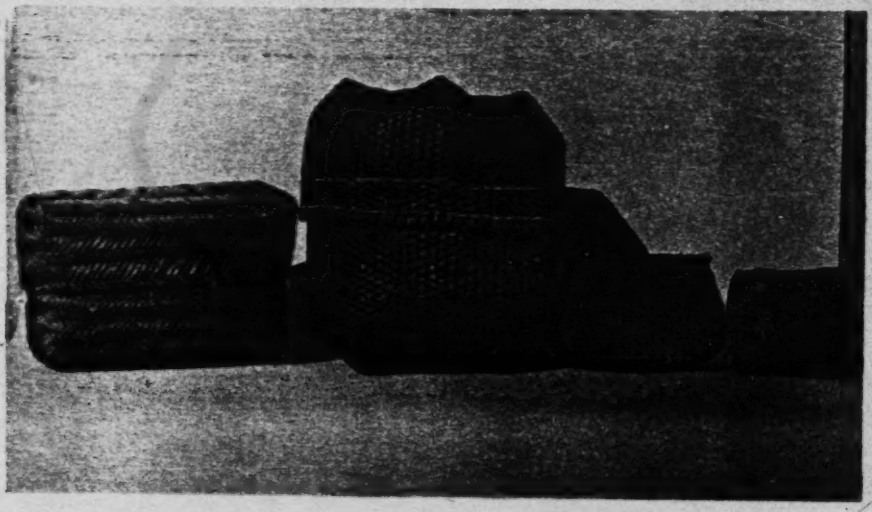

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BASKETRY

1:Nimuendajú E-5 (1941-1942) 1952
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PLATE 10

String figures; canoe construction; weaving a quiver. *a–d*. String figures. *a*, *c*, "Hammock ornament." *b*, "Bay." *d*, "Paxiuba root." *e*, Construction of a dugout canoe. *f*, Calixto daueru'kj weaving a quiver. *a–d*, × ⅛.

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1: Nimuendajú E-5 (1941-1942) 1952
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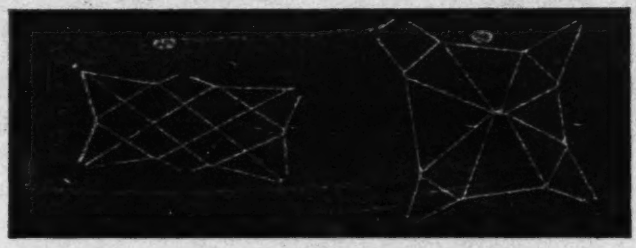

a b

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STRING FIGURES; CONSTRUCTION OF A CANOE; CALIXTO daueru'k[

1:Nimuendajú E-5 (1941-1942) 1952
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PLATE 11

Girls' puberty ceremony. *a*. The seclusion room. *b*. Making the vərĕkl's bracelets. *c*. Carrying the remains of the feast to the river.

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1: Nimuendajú E-5 (1941-1942) 1952
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[285]
[353]
[306]

a

b

[482]

c

FEATURES OF THE GIRL'S PUBERTY CEREMONY

2: Nimuendajú E-5 (1941-1942) 1948
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291 Men formerly wore a belt with one apron of turury inner bark in front and another behind. The penis was stuck under the belt. Women [174] perhaps at first went about entirely nude, but later adopted a short cloth of turury or of woven cotton, wrapped around the hips. Men wore 301 bracelets with long feathers and necklaces of teeth (pl. 65, *bottom*). At 292 feasts chiefs wore a cap of feathers mounted on a cotton or *Bromelia* net, or large diadems.

MANUFACTURES

532 **Bark cloth.**—Various masks and zoomorphic figures are made of bark 287 cloth (pl. 64).

285 **Basketry.**—Clothes baskets are made of uarumã stalks with a round opening closed with a lid. Four points are drawn up and down over the lid and the bottom, the latter serving as legs. Other baskets have a flat square lid and bottom. Both types of baskets are made in all sizes, from 2 to 16 inches (4 to 40 cm.) in diameter. Burdens are carried [482] in large conical baskets hexagonally woven of liana, or in cylindrical baskets of uarumã stalks. These are supported by an embira-fiber tumpline. The *Tucuna* also use pouches of looped tucum threads.

323 **Pottery.**—Women and sometimes men still make bowls, dishes, pans, [531] and pots of clay, which are decorated with painted or modeled ornaments. [776] Potter's clay is gathered according to certain rules so as not to anger its owner, a water demon who appears in the shape of the western rainbow.

415 **Gourds.**—Gourds are covered with a black lacquer, and may bear de- 531 signs in indelible red pigment. Wooden spoons are carved, sometimes in fantastic shapes.

411 **Weapons.**—The bow is 6½ feet (2 m.) long with the ends notched to hold the string. It is now rare, even as a fishing weapon. The hunting arrow has a poisoned wooden head and feathering of the arched type. Arrows are 5 feet 4 inches (1⅗ m.) long. Spears have three types of points: (1) a poisoned, wooden point with four corners; (2) an iron point; and (3) a plain pointed stick. The last two are still used to hunt jaguars and peccaries. The *Tucuna* blowgun is over [278] 10 feet (3 m.) long, and the darts 1 foot (30 cm.) long. The poison [178] is the most effective of any made in the Amazon Basin, but its manufacture, which requires much time and care, is now being forgotten. [231] Hunting dogs, which are of little use, are, according to tradition, pre- [173] Columbian.

SOCIAL AND POLITICAL ORGANIZATION

181 The *Tucuna* are industrious and hard working, kind to their friends, honest, patient, and hospitable. But they are more liable than other Indians [762] to great outbursts of sudden anger, a trait which sometimes leads them to suicide. This is a manifestation of their individualism and desire to live

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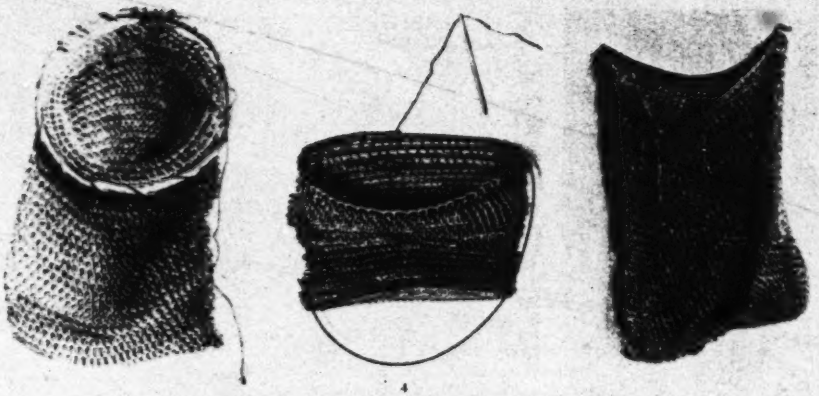

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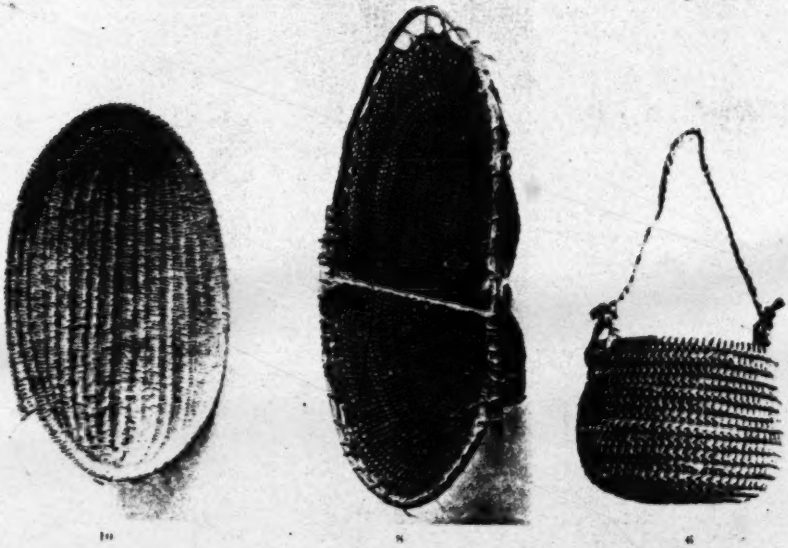

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KNITTED BASKET-WORK FROM THE TUKUNA INDIANS, BRAZIL.

GOTHENBURG MUSEUM.

For descriptions see note on page 163.

[FACING p 161]

3: Ryden E-4 (no date) 1935 SQ20 Tucuna SQ20

MAN

A MONTHLY RECORD OF ANTHROPOLOGICAL SCIENCE

PUBLISHED UNDER THE DIRECTION OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND

XXXV, 183-187 NOVEMBER, 1935

ORIGINAL ARTICLES.

America, South: Technology. With Plate L. **Rydén.**

Notes on a Knitting Technique from the Tukuna Indians, Brazil. *By Stig Rydén, Gothenburg (Göteborg) Museum, Sweden.*

286 183

In a collection from the Tukuna (Ticuna) Indians, acquired by the German-born Brazilian explorer Curt Nimuendajú in 1929 on Rio Solimões for the Gothenburg Museum, are, *inter alia*, preserved two carrying-nets (Figs. 1 and 3) (Nimuendajú, Curt: *Besuch bei den Tukuna-Indianern*, Ethnologischer Anzeiger Bd. II: 4, Stuttgart, 1930, sid. 188). In one of these nets (Fig. 1) the mouth is kept open with a narrow wooden branch bent into a circular hoop, while in the other (Fig. 2) no such arrangement is found, but a cord for carrying is provided instead. Both nets are manufactured of vegetable fibre, and the knitting technique employed is seen in detail in Fig. 2. The Tukuna collection also includes a partly finished carrying-net (Fig. 4). From this unfinished piece of work it is evident that the loops were formed by means of a bone needle on a thin sliver of uniform thickness, probably cut out from the skin of the petiole of a palm leaf. The sliver is allowed to remain in the net until the knitting is completed, whereupon it is broken up and removed. The presence of this uniformly thick sliver ensures that the loops of the net are all turned out even-sized. In this case the sliver performs a function corresponding to that of a mesh gauge, and the retention of the sliver in the meshes while knitting is going on tends to make the net more easily handled as the work continues. The method of forming the loops on the sliver will be apparent from Fig. 5.

296 227 171

Koch-Grünberg (*Zwei Jahre unter den Indianern*, Berlin, 1909–10, Part II, Figs. 12, 13, p. 39) depicts a number of fishing implements from Rio Aiáry, in Brazil, where the same knitting technique has been employed as in the carrying-nets of the Tukuna. These fishing implements are designed for catching small fish and crabs, and consist of a more or less circular net kept open by means of a bent twig. These smaller-sized fishing nets are, in contradistinction from the larger variety, among the Rio Aiáry Indians always woven in the technique just referred to. As to the method employed in the weaving of these nets nothing is mentioned by Koch-Grünberg. It may, however, be supposed that they were manufactured by the same method as were the carrying-nets of the Tukuna tribe. For it may be noted that Koch-Grünberg in the same connection illustrates a "network basket" for crab-fishing, and in this basket the sliver is still left in the finished article, that is to say, the knitting technique is identical with that of the Tukuna net prior to the breaking up of the sliver.

171

Already in the earliest treatise known to me on South American knitting technique, a brief essay published by P. Radin in 1906 (*Zeitschrift für Ethnologie*, Band 38, Berlin, 1906, p. 938), the author's attention is turned to the technique here dealt with. At that time very little authentic material was available, and scantier still were data as to methods of manufacture. Thus he supposes that in the knitting *two* slivers were used, one that was pushed in for the purpose of securing in their places the loops already formed, and another for determining the size of the loops.

171 285

It is not impossible that the knitting technique here described constitutes a development of a certain basket-weaving method, viz., the so-called coiled basketry technique. Especially striking is the similarity between this knitting technique and the variant of coiled technique that occurs in

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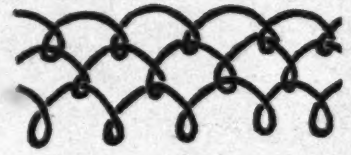
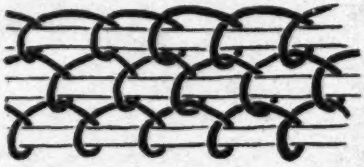
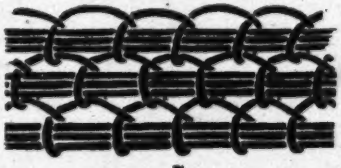


2

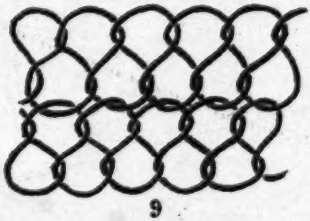


5

T
171
286

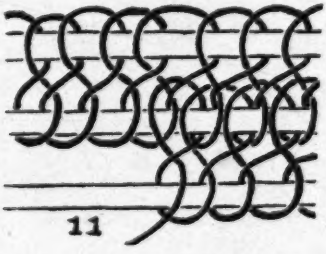


7



9

M
[286]



11

Tierra del Fuego. A basket from the Ona tribe executed in this technique is depicted in Fig. 6, of which a detail is shown in Fig. 7. This particular basket is probably made of some kind of grass. This basketry technique is, however, so far as I know, absent in the Amazonas region, while on the other hand there exists to this day among the Apinayé and Canellas Indians of eastern Brazil the variant of the coiled technique in which the ultimate spiral is fastened to the last but one by pulling the connecting string *through* the next foregoing instead of—as in Fig. 7—*making a loop* round the whole of it. (*Cf.* Mason, Otis T., *Directions for collectors of American basketry*, Smithsonian Institution. Part P of *Bulletin of the United States National Museum*, No. 39, Washington, 1902, Fig. 31). This technique occurs besides also in other localities in the Amazonas region. Coiled technique is nowadays almost entirely discarded by the two Brazilian tribes just referred to, but was formerly no doubt considerably more widely distributed in South America. In that continent it seems to be steadily dying out.

In another work of Mason (*Aboriginal American Basketry*, Annual Report of the Board of the Smithsonian Institution, Report of the U.S. National Museum, Washington, 1904, p. 248), he has also pointed out the similarity between the knitting technique here dealt with (Fig. 2) and the coiled technique employed in basketry manufacture, and describes it as "looking "as all-coiled basketry would if the foundation were "removed." Again he says of it: "Further on "illustrations will be given showing the wide extent "of this technical process of coiled basketry without "foundation. Examples in the U.S. National Museum "come from as far south as Paraguay and even the "Straits of Magellan. It is in common use as far "north as northern Mexico. Both the possession of "different material and the demands of a tropical life "have occasioned the employment of this particular "technic in articles of common use about the "household. Its relation to coiled basketry and bead "work is shown by the fact that women in making "the fabric use a needle to carry the thread or string "around through the row of work proceeding. A "small rod or mesh gauge is used to secure uniformity "in the size of the meshes." In the last-mentioned work (Fig. 204) Mason, besides, depicts an Arawak woman with a carrying-net executed in the technique seen in Fig. 5, *i.e.*, with the wooden sliver left in.

FIGURES 2, 5, 7, 9, 11. KNITTING TECHNIQUES: TUKUNA INDIANS, BRAZIL.

For descriptions see note on p. 163.

1[i.e., coiled. - Analyst]

3: Ryden E-4 (no date) 1935 SQ20 Tucuna SQ20
Mende FC7
Ona SH6

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286

It is not impossible, however, that the knitting technique recorded from the Tukuna Indians—in which a sliver is employed—may have originated in African regions. For it may be noted that in the West African collections, which have been added to the Gothenburg Museum by the explorer G. Bolinder, there is a woman's fishing net (Fig. 8) from the Mendi tribe of central Sierra Leone, exhibiting the technique illustrated in Fig. 9. Bolinder's collection also includes a similar net half-finished (Fig. 10) from the same tribe. This piece of work discloses that in this case, too, the loops have been formed on a uniformly thick sliver which is broken up and removed when the work process is completed, that is to say, in the manner used by the Tukuna. The actual knitting technique is, however, as will be seen, somewhat different in each case. The Mendi net is woven of fibre strings, and in the technique generally known as a 'figure-of-eight,' or double loop (Fig. 9). The method of forming this kind of loop by means of a sliver of uniform thickness will be apparent from Fig. 11. The figure-of-eight loop is not unknown in South America. It occurs, for example, frequently in knitted caraguata satchels in the Chaco, although these are always woven without the aid of a sliver or mesh gauze, and the piece of knitting under process is made more easy to handle by keeping it extended between two sticks planted perpendicularly in the ground. For the distribution of the figure-of-eight loop, *see* Erland Nordenskiöld, *An ethnographical analysis of the material culture of two Indian tribes in the Gran Chaco* (Comparative Ethnographical Studies I), Gothenburg, 1919, p. 201. The Gothenburg Museum possesses a partly finished satchel from French Congo (Bakuba), made in the same simple loop technique as the Tukuna carrying-nets. As to the actual mode of manufacture, this differs however in this case from that of the latter. The sliver is left in the last row of loops made, and is evidently pushed forward as the work proceeds. Hence it will be seen that the technique is identical, but the sliver has lost its function of constituting a support for the fabric while the work is progressing, and only acts as a gauge for effecting a uniform size in the loops or meshes.

It is not impossible that the method dealt with above (that of forming the loops on a mesh gauge left in all through the process of finishing the net) was introduced into the Amazonas region by negroes. The West Coast of Africa constituted, as we know, the principal recruiting area of the slave hunters, the eastern coast of Brazil being a not unimportant market for this trade. It is only natural that those negroes brought along with them to their new home country a considerable number of their old culture elements and manufacturing methods.

STIG. RYDÉN.

DESCRIPTION OF THE ILLUSTRATIONS IN PLATE K AND IN THE TEXT.

Fig. 1. Carrying-net. Tukuna. Depth, 20 cm.
„ 2. Knitting technique in carrying-nets, figs. 1 and 3.
„ 3. Satchel with carrying strap. Tukuna. Depth, 35 cm.
„ 4. Satchel, half-finished. Tukuna. Width, 20 cm.
„ 5. Detail of net, fig. 4.
„ 6. Basket. Ona. Width, 12 cm.
Fig. 7. Knitting technique in basket, fig. 6.
„ 8. Woman's fishing net. Mendi. Central Sierra Leone. Depth, 80 cm., width, 45 cm.
„ 9. Detail of net, fig. 8.
„ 10. Fishing net, half finished. Mendi. Central Sierra Leone. Greatest width, 28 cm.
„ 11. Detail of net, fig. 10.

All the above objects form part of the Gothenburg Museum collections.

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